MULTIMEDIA UNIVERSITY

STUDENT ID NO

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# MULTIMEDIA UNIVERSITY

# FINAL EXAMINATION

**TRIMESTER 3, 2022/2023**

## BAC 3674 – ADVANCED MANAGEMENT ACCOUNTING

(All sections / Groups)

6 OCTOBER 2023
9.00 a.m. –12.00 p.m.
(3 Hours)

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**INSTRUCTIONS TO STUDENT:**

1. This paper consists of **EIGHT (8)** pages excluding the cover page with **4** Questions only.
2. Answer **ALL** questions.
3. All questions carry equal marks and the distribution of marks for each question is given.
4. Please write all your answers in the Answer Booklet provided.

## QUESTION 1

### PART A

Halo Sdn. Bhd. (HL) produces three types of household products, AA, BB, and CC for Malaysia market. The management accountant of HL has identified the following overhead costs and cost drivers for the current period.

| Activity | Cost pools (RM) | Cost driver |
|---|---|---|
| Machine maintenance | 200,000 | Machine hours |
| Machine set ups | 140,000 | Machine set ups |
| Purchasing | 180,000 | Purchase orders |
| Material handling | 120,000 | Material movements |
| Total | 640,000 | |

Each product uses the same resources but in different quantities as shown below:

| | AA | BB | CC |
|---|---|---|---|
| Direct material cost per unit | RM20 | RM20 | RM30 |
| Labour rate per unit | RM5 per hour | RM5 per hour | RM10 per hour |
| Budgeted production (units) | 1,500 | 2,500 | 4,000 |
| Direct labour hours per unit | 2 | 4 | 3 |
| Machine hours per unit | 3 | 2 | 3 |
| Batch size (units) | 50 | 100 | 500 |
| Machines set up per batch | 2 | 3 | 1 |
| Purchase order per batch | 4 | 4 | 6 |
| Material movements per batch | 10 | 5 | 4 |
| Selling price (mark up on total production costs) | 30% | 30% | 40% |

All computations are to be rounded to two decimal points.

**Continued...**

**Required:**

a) Calculate the production costs per unit for AA, BB and CC, using activity-based costing. (8 marks)

b) Calculate the selling price per unit for AA, BB and CC, using activity–based costing. (3 marks)

**PART B**

Identify potential non-value-added activities in HL and what suggestions would you have for HL to improve the competitiveness of the company's products in the marketplace? (4 marks)

**PART C**

FOB has opened a small printing shop 12 months ago. FOB provides good printing services and the business is growing steadily, except for February which is a slack month due to long holiday. Its manager, Mr Adam has been studying the overhead cost and its relationship with machine hours.

Data from the most recent 12 months follow.

| Month | January | February | March | April | May | June |
|---|---|---|---|---|---|---|
| Overhead costs (RM) | 5,030 | 1,600 | 7,210 | 4,560 | 6,880 | 6,520 |
| Machine hours | 2,730 | 600 | 3,403 | 2,200 | 3,411 | 2,586 |

| Month | July | August | September | October | November | December |
|---|---|---|---|---|---|---|
| Overhead costs (RM) | 6,230 | 5,570 | 7,728 | 5,810 | 4,580 | 6,010 |
| Machine hours | 3,364 | 2,411 | 3,960 | 2,897 | 2,207 | 2,864 |

To better understand the relationship between machine hours and overhead costs, Adam has carried out regression analysis on the above data and the following regression analysis have been obtained.

| Constant (a) | $R^2$ | b coefficient |
|---|---|---|
| 428 | 0.99 | 1.86 |

The number of machine hours for next month is expected to be 3,000.

**Continued...**

**Required:**

a) Using the results of the regression analysis, calculate an estimate of overhead costs for next month.

(2 marks)

b) Do you share Adam's confidence that the above estimate of next month's costs is likely to be accurate? Explain why or why not.

(2 marks)

c) Identify the outlier and develop an alternative estimate of next month's costs using the high-low method and explain why this method is generally less reliable than regression analysis as a basis for cost estimation.

(6 marks)

**[TOTAL 25 MARKS]**

## QUESTION 2

### PART A

HM Berhad comprises two divisions: X and Y. X Division currently produces and sells gear assembly used by the automotive industry in electric window assemblies. X Division is currently selling all the units it can produce (25,000 per year) to external customers for RM25 per unit.

At this level of activity, X's per unit costs are:

| | RM |
|---|---|
| Variable cost: | |
| Production | 7 |
| Selling and administration | 2 |
| Fixed cost: | |
| Production | 6 |
| Selling and administration | 5 |

Y Division wants to purchase 5,000 gear assemblies per year from X Division. Y Division currently purchases these units from an outside vendor at RM22 each.

**Continued...**

**Required:**

a) Calculate the minimum price per unit that X Division could accept from Y Division for 5,000 units of the gear assembly and be no worse off than currently.

(7 marks)

b) Outline three goals of a transfer pricing system in a decentralised organization.

(3 marks)

**PART B**

RW Berhad introduced JIT manufacturing last year and has prepared the following data to assess the benefits from the change:

| **Category** | **Before the change** | **After the change** |
|---|---|---|
| Production cycle time | 75 days | 30 days |
| Inventories | RM250,000 | RM60,000 |
| Total sales | RM1,600,000 | RM2,000,000 |
| | | |
| Costs as percentage of sales: | | |
| Direct materials | 20% | 10% |
| Direct labour | 20% | 15% |
| Variable support | 25% | 15% |
| Fixed support | 10% | 5% |

Inventory carrying (financing) costs are 20% per year. Support costs are based on a time-driven activity-based costing analysis.

**Required:**

a) Estimate the total financial benefits that resulted from the switch to JIT manufacturing operations. (10 marks)

b) Outline two qualitative factors that should be considered before RW Berhad implementing JIT system. (5 marks)

**[TOTAL 25 MARKS]**

**Continued...**

## QUESTION 3

Precision Tools Berhad (PT) is a manufacturer of high-quality tools for those working in the engineering industry. The mission statement of the company declares that it is dedicated to maximising the wealth of its shareholders and, since it was formed in 1992, the company has grown rapidly.

Recently, the company has developed a new type of drill and the directors of the company are now considering whether this drill should be manufactured and sold. The following information is available to help evaluate the viability of the new product:

i. Costs incurred in designing and developing the new drill, which have all been paid, were RM220,000. These costs are to be written off in equal instalments against profits generated over the new product's expected life of four years.

ii. Sales are expected to be 18,000 drills per year over the next four years. The selling price of each drill will be RM40 in the first three years and RM30 in the fourth year.

iii. Variable costs are estimated to be RM15 for each drill.

iv. Additional fixed costs are expected to be RM295,000 per year. This includes a charge for depreciation of equipment used in the manufacture of the drills of RM80,000 per year.

v. Equipment that originally cost RM800,000 and which has a written down value of RM450,000 will be used to produce the new product. If the new drill is not manufactured, the equipment will be sold immediately for RM420,000 as it cannot be used for any other purpose. If, however, the drill is manufactured, the equipment will be sold at the end of four years for RM86,000.

vi. Additional working capital of RM120,000 will be required immediately to support the manufacture of the new product. This will be released at the end of the life of the new product.

The company uses the net present value method and the discounted payback method to evaluate new investment opportunities. When applying these methods, the company uses a cost of capital of 10% and adopts a maximum discounted payback of two years.

**Continued...**

Discounting factor for 10% is as follow:

| Year 0 | Year 1 | Year 2 | Year 3 | Year 4 |
|---|---|---|---|---|
| 1 | 0.91 | 0.83 | 0.75 | 0.68 |

All calculations are to be rounded to its nearest one decimal point.

Ignore taxation.

**Required:**

a) Calculate the incremental cash flows arising from a decision to produce the new drill.
(13 marks)

b) Calculate: (i) the net present value (NPV), and (ii) the discounted payback period of the new drill.
(6 marks)

c) Evaluate the investment criteria adopted by the business and state, with reasons, whether the new drill should be produced.
(6 marks)

**[TOTAL 25 MARKS]**

**QUESTION 4**

**PART A**

Electric Motor Company (EMC) makes electric motorcycles and has two products, the Elegant and the Excellent. To produce the Elegant, EMC employed assets of RM10,500,000 at the beginning of 2022 and RM14,450,000 of assets at the end of 2022. Other costs to manufacture the Elegant include the following:

| | |
|---|---|
| Direct materials | RM5,000 per unit |
| Setup | RM1,500 per setup-hour |
| Production | RM415 per machine-hour |

General administration and selling costs for Elegant total RM7,820,000 in 2022. During the year, EMC produced 11,000 Elegant motorcycles using 6,000 setup-hours and 139,000 machine-hours. It sold these motorcycles for RM12,000 each.

**Continued...**

**Required:**

a) If EMC defines investment as average assets during the period, what is the return on investment for Elegant? (4 marks)

b) Calculate the residual income for Elegant if EMC has a required rate of return of 16% on investments, based on average assets employed. (3 marks)

c) Naim, the marketing manager of EMC, says that the balanced scorecard can be created to replace the current financial measures as the primary mechanism for performance evaluation. He says that it uses only non-financial measures. Do you agree? Explain. (3 marks)

d) List THREE non-financial measures that EMC should use to evaluate performance. (3 marks)

**PART B**

Digital Calculus Company makes calculators for students. The company has been working on improving its quality over the last year and it wants to confirm a reduction in their costs-of-quality (COQ). Here are the results:

**ANNUAL COQ REPORT**

| | 2021 RM | 2022 RM |
|---|---|---|
| Quality training | 5,500 | 6,250 |
| Machine repairs | 4,000 | 3,750 |
| Warranty repair costs | 8,300 | 6,000 |
| Design engineering | 4,500 | 5,000 |
| Product testing | 3,100 | 4,000 |
| Rework | 9,250 | 7,880 |
| Total COQ | 34,650 | 32,880 |
| Total Revenue | 525,000 | 600,000 |

**Continued...**

**Required:**

a) Identify the category for each of these COQ. (2 marks)

b) Prepare a COQ Report with sections consisting of the subtotal, the percentage of revenues and the percentage of total COQ on a categorical basis. (6 marks)

c) Based on the results obtained from requirement 2, would you conclude that Digital Calculus' quality programme has been successful? Discuss. (4 marks)

**[TOTAL 25 MARKS]**

**(GRAND TOTAL 100 MARKS)**

**End of Paper**